

The Necessity of New Contract Models for Agile Project Management

by Dr. David F. Rico, PMP, ACP, CSM

Does the use of agile project management require new contract models in order to be successful? Can agile project management be used with traditional fixed price contracts? Does agile project management require a new type of contract? And, if so, what sorts of contracts are required? Furthermore, wouldn't a new type of contract discourage the use of agile project management?

Agile project management is a new paradigm for managing high risk, time sensitive, research and development oriented new product and service development projects. It's a lightweight, flexible, collaborative, adaptable, and highly disciplined project management model for building high quality hardware and software technology intensive products and services.

Agile project management is designed to lead and empower teams to deliver business value over meeting constraints by adapting to change over following plans. This is accomplished with a light structure of product visioning, adaptive planning, iterative development, and thorough product testing. It is also based on a strong foundation of customer collaboration and teamwork.

The traditional model of project management attempts to minimize risk through exhaustive scope definition, planning, documentation, and process controls. Completing a project within a 5% or 10% level of scope, time, and cost under or overrun is considered success. Detailed work breakdown structures and earned value management are used as the basis for corrective action.

Traditional project management is based on the notion that all customer requirements can be defined as explicit knowledge, captured in detailed plans, and delivered with precision accuracy. Therefore, a variety of contract vehicles have emerged over the last century to realize the vision of scope driven project management paradigms that provide a legal advantage to the customers.

Old Contracts	Description
Agreement	Basic statement of terms and conditions (as a prelude to a detailed contract)
Fixed	Contract ascribing cost liability to supplier (regardless of scope change)
Reimbursement	Contract allowing minor cost growth to suppliers (award fees, inflation, etc.)
Indefinite	Contract specifying minimum performance (products, services, etc.)
Incentive	Contract establishing profit sharing conditions (to minimize cost vs. scope)
Others	Contract for services with specified execution costs (salary and wage caps)

Traditional contracts have many issues. Separate suppliers are used for scoping vs. development. Buyers and suppliers do not collaborate in critical early phases. Buyers select suppliers based on arbitrary proposals. Terms and conditions are ambitious. Effort estimates are overly optimistic. Suppliers underbid in order to win contracts. Buyers shop by lowest price rather than best value.

Traditional contracts result in what is known as "the winner's curse." The symptoms include large increases in scope, time, and cost. Others include reduced quality, customer satisfaction, and delivery order quantities. The statistics haven't changed much in 50 years (i.e., 67% of IT projects are challenged and failing resulting in \$1 trillion in lost global revenues each year).

Innovation researchers have discovered that 70% of new product or service needs exist as tacit knowledge among customers, and can only be elicited verbally. As a result, innovation projects often exhibit extremely large changes in scope over time. Therefore, success is defined as satisfying a customer's emergent needs rather than unrealistic scope, time, and cost objectives.

Agile project management is a confluence of two major 20th century paradigms: (1) rational model and (2) human behavior. It is also attributed to chaos or complex adaptive systems theory, flexible manufacturing, and incremental or participative planning. It is based on the idea that innovation results from tacit knowledge that emerges through informal human communication.

Agile project management embraces the essence of traditional project management with flexible yet disciplined processes. However, it is based on a process of “learning by doing” to gradually discover a project’s scope while simultaneously delivering the biggest bang for the buck. Thus, flexible new contract models emerged to achieve total customer satisfaction using this paradigm.

New Contracts	Description
Dynamic Value	Contracts specifying initial scope and needs (with iterative enhancements)
Performance	Contracts establishing performance objectives (but not solutions)
Optional Scope	Contracts specifying boundaries for time, cost, and quality (but not scope)
Target Cost	Contracts specifying minimum and maximum costs (based on initial scope)
Collaborative	Contracts specifying initial scope (with fixed no. of releases and iterations)
Lean	Contracts based on respect, value, system thinking, flow, pull, and perfection

These new contract models have many similarities. Buyers and suppliers collaborate throughout the process. Customer needs analysis is performed that often results in a strategy, roadmap, goals, objectives, and capabilities. Cost goals are established along with near term time horizons. Finally, the use of agile vs. traditional project management principles and practices is expected.

The results of utilizing new contract models for agile project management are impressive. Agile contracts result in an average of 60% improvements in productivity, quality, and customer satisfaction according to major surveys. An analysis of 71 studies revealed an average of 73% improvements in cost, schedule, productivity, quality, and customer satisfaction.

Agile project contracts are up to 20 times less expensive than traditional ones, which translates into a 1,600% increase in benefits in terms of return on investment, net present value, and real options. Furthermore, major studies reveal that well run agile contracts experience 1% overruns as opposed to 60% for traditional contracts, which is attributed to better customer collaboration.

The use of agile project management emerged with the popularity of Extreme Programming and Scrum in the early 21st century. By the middle of the first decade, up to 70% of small to medium sized worldwide projects used agile project management. However, both its proponents as well as detractors still have many questions concerning the use of agile project management:

- Has agile project management crossed the chasm (i.e., what is its adoption rate)?
- Why doesn’t the government use agile project management (especially the U.S. DoD)?
- Can agile project management be used in highly regulated industries (i.e., FAA, FDA, etc.)?

The answers to these questions may be surprising and unexpected to some people. Agile project management has crossed the chasm in many regards. As mentioned earlier, 60% to 70% of small to medium sized IT projects have been using agile project management since 2002. This includes Fortune 500 firms along with most industry sectors in North America, Europe, and the Far East.

Government agencies have also been using agile project management for the past decade. U.S. DoD agencies have been using evolutionary contracting models on large projects. Recent data shows that nearly 70% of small to medium sized U.S. DoD projects currently use agile project management. The U.S. DoD is revising its contract models for agile project management use.

Highly regulated industries such as the Federal Aviation Administration and Food and Drug Administration have also been using agile project management for the last decade. It includes a rigorous life cycle wide regimen of verifying and validating products and services against requirements. This is often done in a highly automated fashion called “continuous integration.”

Another frequently asked question is, “how can we convince our customers to use agile project management?” Ironically, customers often ask suppliers to use agile project management in order to achieve their business goals at the least cost in today’s resource constrained economy. Public and private sector leaders have heard of its benefits, even if practitioners have not.

The list of organizations that have adopted agile project management is a veritable who’s who. This includes Fortune 500 firms, large military firms, and U.S. DoD agencies themselves. The last bastion of traditional contracts seems to be large public sector projects. However, even these are beginning to transition to using agile project management in increasing numbers everyday.

Agile project management is well suited to help realize post industrial information age projects, which involve elements of ambiguity, risk, and lofty objectives. On the other hand, traditional contracts that assume requirements can be established without buyer and supplier collaboration and then realized with rigid project management models are not well suited for today’s needs.

Dr. Rico has been a leader in support of major U.S. gov’t agencies for 25 years. He’s led many Cloud, Lean, Agile, SOA, Web Services, Six Sigma, FOSS, ISO 9001, CMMI, and SW-CMM projects. He specializes in IT investment analysis, portfolio valuation, and organizational change. He’s been an international keynote speaker, presented at leading conferences, written six textbooks, and published numerous articles. He’s also a frequent PMI, APLN, INCOSE, SPIN, and conference speaker (<http://davidfrico.com>).